No. 4

P1 = 15 bar
v1 = 0.07142 $m^3/_{kg}$
From 1 to 2 V = Const.
X2 = 1
V2 = 0.7142 $m^3/_{kg}$
From 2 to 3 Isothermal Expansion
T3 = T2
P3 = 15 bar
From 3 to 1 P = Const.
T1 = 196.3 ºC
X1 = 0.5423
P2 = 28 bar
T2 = 230 ºC
T3 = 230 ºC

T	200	230	250
vg	0.1317	v3	0.153

$^{250-230}/_{250-200} = {}^{0.152-v3}/_{0.152-0.1317}$
v3 = 0.14388 $m^3/_{kg}$
W1-2 = 0

U2 = xug + (1-x)uf = 2603 $^{kJ}/_{kg}$ (x = 1)

T	200	230	250
ug	2597	U3	2784

U3 = 2709.2
W3-1 = P(V1-V3) = -108.69 $^{kJ}/_{kg}$
Q1-2 = U2 - U1
U1 = xug + (1-x)uf = 1793.11 $^{kJ}/_{kg}$
Q1-2 = 809.89 $^{kJ}/_{kg}$
S2 = sf + xsfg = 6.213 $^{kJ}/_{kg}$ K

T	200	230	250
sg	6.452	S3	6.711

S3 = 6.6.074 $^{kJ}/_{kg}$ K
Q2-3 = T(S3 - S2) = 90.712 $^{kJ}/_{kg}$
W2-3 = Q + U1 - U2 = -15.488 $^{kJ}/_{kg}$
Q3-1 = U1 - U3 + W = -1024.78 $^{kJ}/_{kg}$